



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,769	07/17/2003	Peter Graham Foster	P07693US01/RFH	9158
881 7590 04/30/2008 STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314			EXAMINER NGUYEN, TANH Q	
			ART UNIT 2182	PAPER NUMBER
			MAIL DATE 04/30/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/620,769

Applicant(s)

FOSTER ET AL.

Examiner

TANH Q. NGUYEN

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008 (RCE).
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-39, 41 and 51-54 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 32-39, 41 and 51-54 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 22, 2008 has been entered.

Note that the amendment filed November 14, 2007 is informal – as it does not include a signature, and is used only during the interview dated November 16, 2007.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). With respect to claim 34, applicant appears to claim the subject matter disclosed in the specification at page 13, line 21-page 15, line 14. The subject matter claimed in claim 34, however, is entirely different than what is disclosed. For example:

Claim 34 recites “monitoring traffic local to each of said plurality of USB devices for a trigger request signal and for a trigger command signal, indicative respectively of an **initiating** trigger request and of a trigger command” in lines 5-7. The specification does not support a trigger request signal being indicative of an initiating trigger request. The specification instead discloses “transmitting a predetermined trigger request signal

and a predetermined trigger command signal in the USB data traffic, indicative respectively of a trigger request and of said trigger command” and “monitoring said USB data traffic local to each of said USB devices for said trigger request signal and for said trigger command signal” (see page 13, lines 28-34).

Claim 34 recites “transmitting **said trigger request signal** with said USB host to each of said plurality of USB devices to prepare said plurality of USB devices to each **execute said initiating trigger request**” in lines 8-10. The specification does not support the trigger request signal for preparing the USB devices to execute the initiating request. The specification instead discloses “sending an initiating trigger request signal by means of said USB host to each of said USB devices to prepare said USB devices to execute said trigger request” (see page 13, lines 35-37).

The citations above are merely examples, and additional inconsistencies between claim 34 and the disclosure at page 13, line 21-page 15, line 14 are not discussed further – as it appears that claim 34 is already improperly claimed.

Applicant needs to revise claim 34 accordingly to overcome this objection. In addition, the disclosure is cryptic and does not allow the examiner to determine or understand the scope of the invention. Applicant needs to provide an explanation of what the cited section discloses to help the examiner understand the invention.

Claim Objections

3. Claims 32-34, 38 are objected to because of the following informalities:

“generating a plurality of local reference signals, each local reference signal

Art Unit: 2182

corresponding to each respective one of said plurality of USB devices, from at least one of said first specific signal structures received at each of said plurality of USB devices" in lines 13-16 of claim 32 should be replaced with --generating a plurality of local reference signals, each local reference signal corresponding to each respective one of said plurality of USB devices, each local reference signal being generated by each respective one of said plurality of USB devices from at least one of said one or more first specific signal structures received at each of said plurality of USB devices-- for clarity and consistency

"locking a plurality of frequencies of said plurality of local clocks" in line 17 of claim 32 should be replaced with -- locking a plurality of frequencies of said plurality of local clocks at said plurality of USB devices-- for clarity

"transmitting one or more second specific signal structures to each of said plurality of USB devices and transmitting specified response signals corresponding to said one or more second specific signal structures from said plurality of USB devices" in lines 26-29 of claim 32 should be replaced with --transmitting by the common USB host one or more second specific signal structures to each of said plurality of USB devices and transmitting specified response signals corresponding to said one or more second specific signal structures from each of said plurality of USB devices-- for clarity

"for specified response signals" in lines 31-32 of claim 32 should be replaced with --for said specified response signals-- for clarity and consistency

"at least one of said second specific signal structures" in line 34 of claim 32 should be replaced with --at least one of said one or more second specific signal

Art Unit: 2182

structures-- for clarity and consistency

"determining a plurality of relative propagation times, each relative propagation time corresponding to each one of said plurality of USB devices other than a reference USB device selected from said plurality of USB devices" in lines 46-48 of claim 32 should be replaced with --determining a plurality of relative propagation times with respect to a reference USB device selected from said plurality of USB devices, each relative propagation time corresponding to each one of said plurality of USB devices other than a said reference USB device ~~selected from said plurality of USB devices~~-- for clarity

"said local clocks" in lines 1-2 of claim 33 should be replaced with --said plurality of local clocks-- for consistency

"a plurality of local clocks" in line 3 of claim 4 should be replaced with --said plurality of local clocks-- for consistency and clarity

"said USB devices" in lines 4-5 of claim 38 should be replaced with --said plurality of USB devices-- for consistency.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 32-39, 41, 51-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 32 recites "A method of synchronizing a plurality of local clocks of **a plurality of USB devices to be synchronized**, each local clock corresponding to each one of **a plurality of USB devices**, the plurality of USB devices being connected to a common USB host via a USB tree so that said plurality of local clocks of said plurality of USB devices are in phase and at a common frequency" in line 1-5. The limitation suggests that the plurality of USB devices to be synchronized (a plurality of USB devices to be synchronized in lines 1-2) and the plurality of USB devices (a plurality of USB devices in line 3) are different. The claim is not enabled because each local clock (of the plurality of local clocks of the plurality of USB devices to be synchronized) cannot correspond to each one of the plurality of USB devices (i.e. USB devices to be synchronized and USB devices not to be synchronized), and because "said plurality of local clocks of said plurality of USB devices" in lines 4-5 lacks antecedent basis.

Claim 34 recites "monitoring traffic local to each of said plurality of USB devices for a trigger request signal and for a trigger command signal, indicative respectively of an initiating trigger request and of a trigger command" in lines 5-7, and "transmitting said trigger request signal with said USB host to each of said plurality of USB devices to prepare said plurality of USB devices to each execute said initiating trigger request" in

lines 8-10. The claim is not enabled because the limitations suggest monitoring of the traffic for signals that have not been transmitted.

Claim 34 is also not enabled for the reasons discussed with respect to the objections to the specification above.

7. Claims 34-39, 41, 51-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See the objections to the specification above.

8. Claims 32-39, 41, 51-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 recites "A method of synchronizing a plurality of local clocks of **a plurality of USB devices to be synchronized**, each local clock corresponding to each one of **a plurality of USB devices**, the plurality of USB devices being connected to a common USB host via a USB tree so that said plurality of local clocks of said plurality of USB devices are in phase and at a common frequency" in line 1-5. The claim is indefinite for the reasons set forth above with respect to enablement.

Claim 34 recites "for a trigger request signal and for a trigger command signal, indicative respectively of an initiating trigger request and of a trigger command" in lines

5-7. It is not clear what the limitations mean, and there is not enough information in the specification for the examiner to understand the limitation.

Claim 34 is also indefinite for the reasons discussed with respect to the objections to the specification above.

Claim 35 and claim 37 appears to suggest that the trigger command signal is comprised of the same elements as the elements of the trigger request signal. It is not clear to the examiner that there is a difference between the trigger request signal and the trigger command signal. Furthermore, it is not clear how a trigger command signal or a request signal can include only USB packet signal structure, or data sequences (i.e. non-command signals)

9. The rejections that follow are based on the examiner's best interpretation of claims 32-33.

There is no art rejection of claim 34 and claims that depend on claim 34 because the claims, as recited, do not enable the examiner to interpret the claims without requiring the examiner to make a great deal of speculation. If applicant believes that the claims are correctly recited, the examiner requests that applicant provides support for the subject matter being claimed (i.e. maps the limitations of at least claim 34 to specific sections of the specification - by page and line numbers, drawings and labels, as appropriate).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

Art Unit: 2182

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crutchfield et al. (US 2002/0196884 A1)/Greco et al. (US 7,081,583)/Cho (US 6,954,506)/Brief (US 6,678,760) in view of Lee et al. (US 7,174,475) and further in view of Dreps et al. (US 6,654,897).

12. As per claim 32, each of Crutchfield ([0006]), Greco (col. 1, line 19-col. 3, line 17), Cho (Abstract; col. 1, line 10- col. 3, line 60), and Brief (col. 1, line 17-col. 3, line 63) teaches locking the frequency of a clock of a USB device to a predetermined degree. The teachings of Crutchfield, Greco, Cho and Brief, when applied to a USB tree, would allow USB devices in the USB tree to lock the frequency of the respective clocks of the USB devices to a predetermined degree.

Lee teaches synchronization of a plurality of devices (clocks arriving at each node are in phase with a global clock) by determining the relative propagation times from a master device (clock generator) to the plurality of devices (nodes) and using the information to reduce clock skew among the plurality of devices by inserting corresponding delays to the plurality of devices (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the relative propagation delay from a (master) USB device to each of the USB devices of the USB tree and use the information to synchronize the USB devices by inserting corresponding delays to the respective USB devices, as is suggested by Lee.

Dreps teaches synchronizing a plurality of data sources to a reference data source by inserting corresponding delays to the data sources to be in phase with the reference data source (Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to synchronize the plurality of USB devices to a reference USB device in order to have the plurality of USB devices be in phase with the reference USB device, as is suggested by Dreps.

13. As per claim 33, Lee teaches the local clocks being shifted in phase by a desired amount (Abstract).

Response to Arguments

14. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANH Q. NGUYEN whose telephone number is (571)272-4154. The examiner can normally be reached on M-F (9:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARIQ HAFIZ can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 2182

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANH Q. NGUYEN/
Primary Examiner, Art Unit 2182

TQN: April 26, 2008